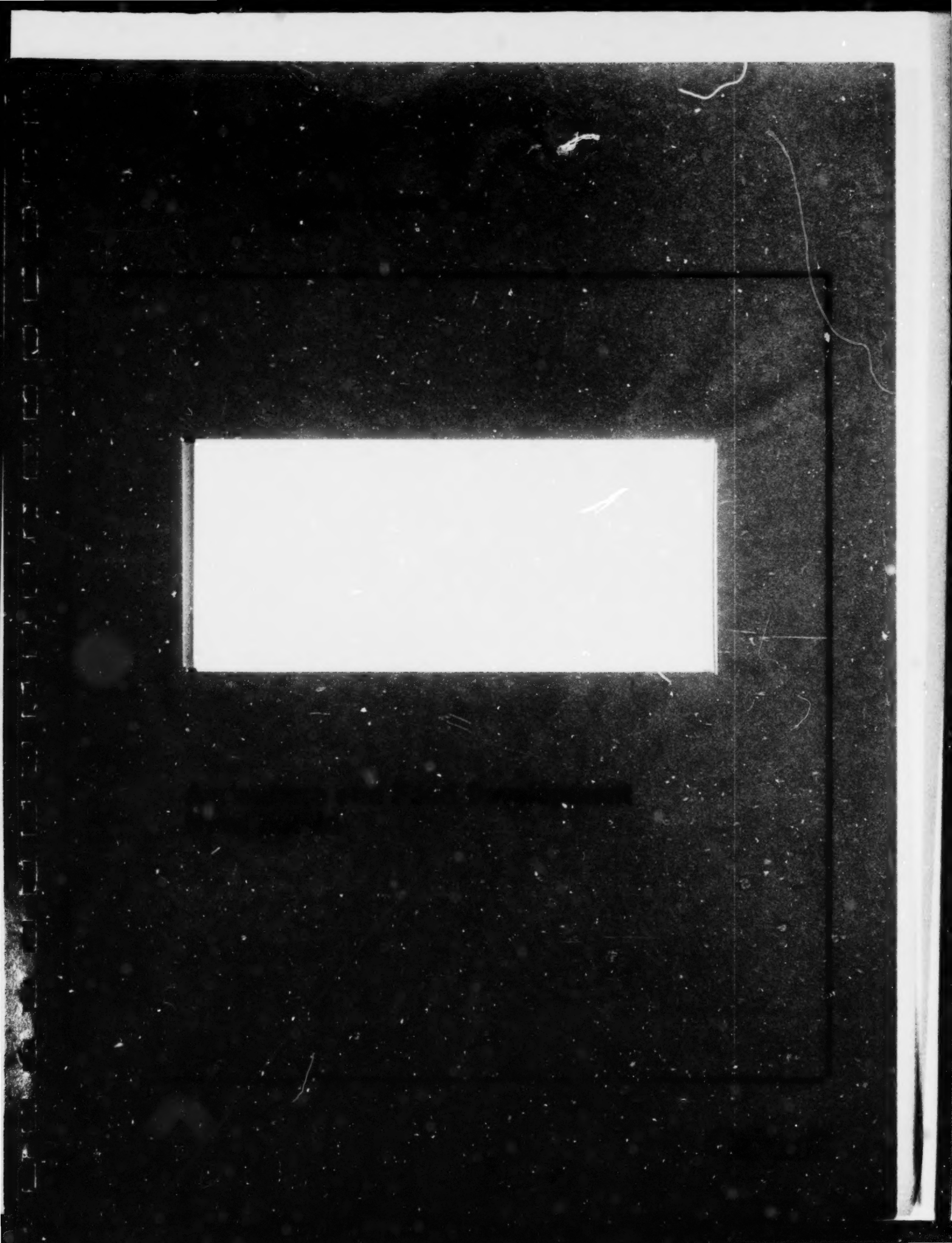


A Working Paper

AGRICULTURE IN THE NORTHUMBERLAND REGION OF NOVA SCOTIA: AN OVERVIEW

A Report Prepared By
Information Research Consultants Ltd.

For Agriculture Canada

March, 1985

CONTENTS

		Page
1.0	INTRODUCTION	1
2.0	THE REGIONS' AGRICULTURAL RESOURCE BASE	4
	2.1 Soils	4
	2.2 Climate	7
3.0	THE REGIONS' AGRICULTURE : RECENT TRENDS AND CURRENT STATUS	8
	3.1 Resource Utilization	8
	3.2 Farming Activities	16
	3.3 Farm Output	23
4.0	OPPORTUNITIES AND CONSTRAINTS RELEVANT TO AGRICULTURAL DEVELOPMENT IN THE REGION	28
	4.1 Introduction	28
	4.2 National Supply Management Commodities	32
	4.3 Non Supply Management Livestock and Livestock Products	35
	4.4 Field Crops	40
	4.5 Fruits	42
	4.6 Vegetables	45
	4.7 Other Commodities	47
	4.8 Other Constraints	48
	4.9 Summary	50
5.0	APPENDICES	51
	5.1 Bibliography	52
	5.2 Persons Contacted	57
	5.3 Regional Census Data by County	58

LIST OF TABLES

		Page
1	Northumberland Region and rest of Nova Scotia: Arable Land	6
2	Northumberland Region and rest of Nova Scotia: Farm Numbers and Land Utilization	9
3	Northumberland Region and rest of Nova Scotia: Farm Labour Characteristics	12
4	Northumberland Region and rest of Nova Scotia: Capital on Farms	15
5	Northumberland Region and rest of Nova Scotia: Field Crop and Vegetable Areas	17
6	Northumberland Region and rest of Nova Scotia: Livestock and Poultry on Farms	19
7	Northumberland Region and rest of Nova Scotia: Farm Mechanization	22
8	Northumberland Region and rest of Nova Scotia: Farms with Sales of $2,500 or more by Product Type	25
9	Northumberland Region and rest of Nova Scotia: Farms by Sales Class	26

1.0 INTRODUCTION

Nova Scotia is comprised of six distinct sub-regions; Valley, South Shore, Halifax, Northumberland, Strait of Canso and Industrial Cape Breton (see map). Each sub-region has a unique set of resources (land, labour, capital) which have resulted in different economic activities. The agri-food industry is established to some degree in all regions.

This report is a review of the current state of the farming sector of the agri-food industry in one region of Nova Scotia. It is intended to provide background information which could facilitate the initial stages of strategy and program development related to the particular needs of the Region. An analysis at the Regional level will permit a better understanding of how any development initiatives will affect the Nova Scotia economy. The report:

a. describes the Regions' agricultural industry in terms of utilization of land, labour and capital, and delineates some aspects of agricultural production, processing and market demand;

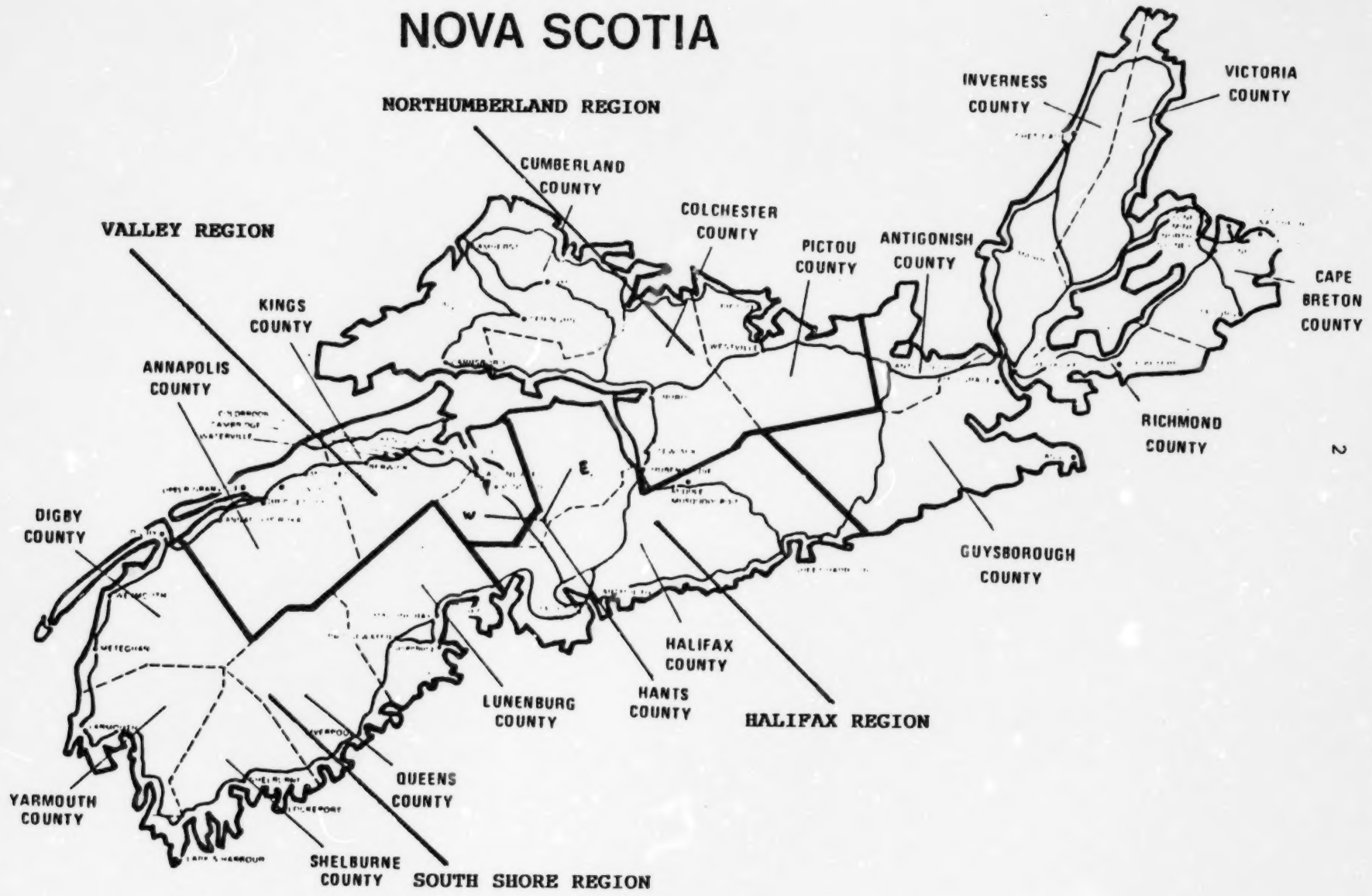
b. establishes opportunities for development of commodities produced in the Region;

c. denotes constraints inhibiting develcpment of commodities produced in the Region; and

d. where appropriate emphasizes the uniqueness of agriculture in the Region, comparing it to the rest of Nova Scotia.

The first part of the report (Sections 2.0 and 3.0) is quantitative in nature, and is based on data from recent censuses of agriculture, as conducted by Statistics Canada, and on soil and climate data. Comparisons are drawn between 1981 farm

NOVA SCOTIA



Map Adapted From Agricultural Directory '85,
N.S. Department of Agriculture and Marketing

data for the Region, and 1981 farm data for the rest of the province. Trends from 1971 to 1981 are compared also for the Region and for the rest of Nova Scotia. Regional census data, by county, are sometimes referred to in the text, and detailed tables of this material may be found in an appendix (Section 5.3).

Census figures cited relate to "census farms" for which the definition has been changed in recent years as follows:

1971: "a farm, ranch, or other agricultural holding on one acre or more with sales of agricultural products, during the 12 month period prior to the census, of $50 or more;"

1981: "a farm, ranch, or other agricultural holding with sales of agricultural products during the past 12 months of $250 or more." Operations with anticipated sales of $250 or more in 1981 were also included.

The second part of the report is more qualitative in nature, and is an evaluation of opportunities and constraints relevant to agricultural development in the Region. This part of the report ties together the following information:

a. quantitative data from Sections 2.0 and 3.0.;

b. results of interviews with several people from the federal and provincial governments (persons contacted and their organizational affiliations are listed in Appendix 5.2);

c. background data from available reports and papers.

This report is one of four similar reports on the Regions of Nova Scotia. A bibliography of material relevant to agricultural development in the Regions may be found in Appendix 5.1.

2.0 THE REGIONS' AGRICULTURAL RESOURCE BASE

2.1 Soils

The Northumberland Region, like the rest of Nova Scotia, has no Class 1 agricultural lands. Substantial areas, however, are Class 2 land. Colchester County has over 32,000 hectares and Cumberland has over 51,000 hectares. Pictou County has over 20,000 hectares. Soils in this class have moderate limitations that restrict the range of crops or require moderate conservation practices. The soils are deep, hold moisture well, and have a high productivity level.

The areas of Class 3 soils are much larger. Cumberland County has almost 107,000 hectares, Colchester over 97,000 hectares, and Pictou over 74,000. These soils are rated fair to good for most classes of crops, although certain soil types within the Class 3 grouping may be rated poor for potatoes and vegetables because of topography or stoniness. Their limitations with respect to wetness, moisture holding capacity and fertility are more severe than Class 2 soils. As a result they require more exacting management and more extensive structural modification, such as drainage. Production costs can be higher than on Class 2 soils.

The areas of Class 4 soils are much smaller than Class 3, but much larger than Class 2. Cumberland County has over 74,000 hectares, Colchester County over 50,000 hectares and Pictou County almost 49,000 hectares. These soils are, for the most part, rated as poor in their suitability for hay, grain, potatoes and vegetables. Most of these soils are rated as fair, or better, for pasture. Steep slopes

contributing to erosion limit the cultivation of much Class 4 land.

An addition of areas of Class 2, 3, and 4 land gave a total for arable land in Nova Scotia, or any of its counties. Total arable land in the Northumberland Region was 555,300 hectares, 35.3 percent of the province's total (Table 1). Cumberland County contained 41.8 percent of the Region's arable land, Colchester 32.4 percent and Pictou 25.8 percent (Table A1).

The Northumberland Region's improved arable land made up 10.2 percent of the Region's total arable land in 1971 and this proportion increased to 12.0 percent by 1981. In comparison the proportion of improved arable land to total arable land in the rest of the province was 9.8 percent in both census years.

Within the Region Colchester County had 12.6 percent of its arable land in an improved state, and the other two counties were only slightly lower.

The Northumberland Region had slightly more than one-third of the province's improved land and total arable land. A relatively high proportion (18.6%) of the Region's total arable land was Class 2 soil, in contrast to a low (6.8%) in the rest of Nova Scotia. The proportion of Class 2 soil to total arable land in the counties ranged from a high of 22 percent in Cumberland to a low of 14 percent in Pictou.

Table 1. Northumberland Region, and Rest of Nova Scotia: Arable Land

	NORTHUMBERLAND REGION	REST OF NOVA SCOTIA	NOVA SCOTIA
Amount of :			
1971 Improved Arable Land (ha)	56,720	99,502	156,222
Residual Arable Land (ha)	498,580	918,180	1,416,760
Total Arable Land (ha)	555,300	1,017,682	1,572,982
Improved Land as Proportion of Total Arable Land (%)			
1971	10.2	9.8	9.9
1981	12.0	9.8	11.3
Proportion of Nova Scotia's:			
1971 Improved Arable Land (%)	36.3	63.7	100.0
Residual Arable Land (%)	35.2	64.8	100.0
Total Arable Land (%)	35.3	64.7	100.0
Proportion of Arable Land Classed as:			
Class 2 (%)	18.6	6.8	11.0
Class 3 (%)	50.2	68.5	62.0
Class 4 (%)	31.2	24.7	27.0
	100.0	100.0	100.0

Source: Derived From Arbour, J. H., Residual Arable Land in The Maritime Provinces, Lands Directorate, Environment Canada, 1981.

2.2 Climate

Nova Scotia has more frequent storms during the year than any other part of Canada. The frequent passing of low pressure areas, associated with bad weather and the maritime location provide Nova Scotia with substantial precipitation. The climate is a modified continental type, characterized by a wide range of temperature. Areas near the coast have milder winters and cooler summers, and have a longer frost-free period. The longer season is offset by cooler temperatures and fewer heat units are available for plant growth.

Distance from the coast and land elevation determine local variations in climate. The province can be divided into eight climatic regions.

The Northumberland Region contains parts of three of the climatic regions:

1. A narrow coastal strip along the Bay of Fundy has a long cool summer, mild winter, frequent fog and moderate precipitation.
2. The Northumberland shore has a delayed spring, but a warm summer and fall. The winter is cold, and the area has the lowest precipitation in the province.
3. The highlands part of the Region has warm summer temperatures but a high snowfall and cold winter temperatures.

Annual precipitation in the Northumberland Region ranges from about 1100 mm to 1200 mm. Total precipitation from May to September inclusive ranges from less than 400 to 450 mm. The number of frost free days ranges from 90 to 110. Corn heat units vary from 1900 to 2300, the lower heat units occurring in the inland area of the Region.

3.0 THE REGIONS' AGRICULTURE: RECENT TRENDS AND CURRENT STATUS

3.1 Resource Utilization

The Northumberland Region reported 1,704 census farms in 1971 (Table 2). By 1981 this number had declined by 3 percent to 1,653. In the rest of the province census farm numbers had fallen from 4,304 to 3,392, a decline of 21 percent.

The counties of Colchester and Pictou each had a small decrease, 9 percent and 5 percent respectively, in farms from 1971 to 1981. Cumberland county had an increase of 4 percent in Census farms over the same time period. (Appendix Table A-2)

The decline in Northumberland Region farms was accompanied by a 4 percent increase in the area of farmland from 1971 to 1981. In the rest of Nova Scotia there was a decline of 21 percent in farmland over the same time period.

The farm area in Colchester and Pictou counties declined 12 percent and 4 percent respectively in the 1971 to 1981 period. Cumberland county on the other hand showed a 12 percent increase in its farm area. The average Northumberland farm size increased from 96 hectares in 1971 to 102 hectares in 1981. In the rest of Nova Scotia the average farm size remained unchanged at 87 hectares over the same time period.

When these farms were classified according to their total land area, shifting patterns of size distribution emerged. The number of small farms and large farms (greater than 226 hectares) in Northumberland both increased, while total farm

TABLE 2: Northumberland region and rest of Nova Scotia: Farm Numbers and land utilization

	NORTHUMBERLAND REGION			REST OF NOVA SCOTIA		
	1971	1981	1981 as % of 1971	1971	1981	1981 as % of 1971
Total No. of Farms	1,704	1,653	97	4,304	3,392	79
Total Area of Farms (000ha)	170.1	168.8	104	367.7	299.2	79
No. of Farms By Land Area						
53 ha.	600	687	115	1,937	1,562	81
53 - 96 ha.	497	388	78	1,063	726	69
97 - 161 ha.	330	310	94	695	574	83
162 - 226 ha.	139	123	89	334	278	84
226 ha.	138	145	105	275	252	92
No. of Farms by Improved Land Area						
4 ha.	195	206	106	1,023	684	67
4 - 27 ha.	809	725	90	2,178	1,507	70
28 - 52 ha.	390	336	87	601	556	93
53 - 72 ha.	134	127	95	226	234	104
73 - 96 ha.	75	114	152	131	158	121
97 - 161 ha.	67	95	142	112	179	160
161 ha.	26	50	193	41	74	181
Use of Farm Land - Hectares						
Improved	56,720	66,582	118	99,502	111,400	112
- Crops	35,089	40,399	116	63,309	72,385	114
- Pasture	16,837	18,779	112	26,656	27,327	103
- Summer Fallow	1,233	2,449	199	1,307	2,705	208
- Other	3,560	4,954	140	8,347	8,987	108
Unimproved	113,427	102,193	90	268,429	185,863	70
- Woodland	92,949	88,393	95	206,888	152,449	74
- Other	20,478	13,800	68	61,541	33,414	55

Source: Statistics Canada Census of Agriculture

number declined. In the rest of the province, the numbers of farms in the 53 to 96 hectares range declined faster than total farm numbers; in all other size classes, farm numbers declined a little more slowly than total farm numbers. The net result was a marginal decrease in the proportion of Northumberland farms of more than 96 hectares and a slightly greater increase in the proportion of such farms in the remainder of the province. Northumberland continued, however, to have relatively more farms of 240 or more total land area than the rest of the province.

While total land reported on Northumberland census farms increased by 4 percent between 1971 and 1981, the area of improved land increased by 18 percent over the same time period. Unimproved land, by comparison, declined by 10 percent, so that in 1981, 40 percent of Northumberland farm land was classed as improved and 60 percent as unimproved.

When county figures are examined for Northumberland for the 1971 to 1981 period Cumberland had the greatest increase (30 percent) in improved farmland, while it was the only county to have an increase (4 percent) in unimproved land. Colchester and Pictou counties had increases in improved land and sharp decreases in unimproved land.

In the rest of Nova Scotia, the improved land area increased 22 percent from 1971 to 1981. The area of cropland increased by 9,149 hectares (15 percent) while improved pasture and summer fallow increased by 705 hectares (3 percent) and 1,401 hectares (108 percent) respectively. Unimproved land declined by 30 percent. Thus, in 1981 improved land made up roughly 38 percent of the total farm land in the rest of Nova Scotia compared to 40 percent in Northumberland.

The 1981 distribution of Northumberland farms according to their area of improved land was more heavily weighted toward small-scale farms. A similar pattern existed in the rest of Nova Scotia.

	Northumberland Region		Rest of Nova Scotia	
Area of Improved Land	1971	1981	1971	1981
Less than 28 hectares	59%	65%	75%	65%
28 - 72 hectares	31%	23%	19%	23%
more than 72 hectares	10%	12%	6%	12%

A comparison of the farm size distribution in 1981 with the distribution in 1971, in the Northumberland Region, showed a shift from the 28 - 72 improved to the farms with smaller land bases (less than 28 hectares) and larger land bases (more than 72 hectares). The rest of the province showed a decline in farms with a small land base (less than 28 hectares) and an increase in the number of farms with medium and large land bases.

A number of characteristics of the farm labour force in the Northumberland Region and the rest of the province were identified (Table 3).

The number of young farmers (under 35 years of age) increased 53 percent in the Northumberland Region compared to 40 percent in the rest of the province. The number of farmers

TABLE 3: Northumberland region and rest of Nova Scotia: Farm labor characteristics

	NORTHUMBERLAND REGION			REST OF NOVA SCOTIA		
	1971	1981	1981 as % of 1971	1971	1981	1981 as % of 1971
No. of farms by age of operator						
under 25 years	22	25	114	38	65	171
25-34 years	168	266	158	374	512	137
35-44 years	294	374	127	778	746	96
45-54 years	456	375	82	1,248	857	69
55-64 years	471	346	73	1,156	766	66
65 years and older	293	267	91	710	446	63
Total days of off-farm work by farm operator during previous year	131,042	150,792	115	327,448	299,376	91
No. of farms Reporting	817	832	102	1,924	1,578	82
Average per farm Reporting	160	181	113	170	190	111
Total Weeks paid labor	21,184	39,245	185	90,489	112,496	124
No. of farms reporting	637	713	112	1,646	1,469	89
Average per farm Reporting	34	55	161	55	77	139

Source: Statistics Canada Census of Agriculture

55 and over declined 20 percent in Northumberland, compared to 35 percent in the rest of Nova Scotia.

The resulting relative age distribution in the two parts of the province changed as follows:

	Northumberland Region		Rest of Nova Scotia	
Age of Farmers	1971	1981	1971	1981
Less than 35 years of age	11%	18%	10%	17%
35 - 54 years of age	44%	45%	47%	47%
55 years and over	45%	35%	43%	36%

Fifty percent of Northumberland Region farm operators reported off-farm work in 1980 compared to 48 percent in 1970. This compared to 47 percent of farm operators reporting off-farm work in 1980 and 45 percent in 1970 for the rest of Nova Scotia. Northumberland farmers indicating off-farm labour, worked an average of 181 days off the farm. This was slightly less than the farms reporting off-farm work in the rest of Nova Scotia (an average 190 days worked off the farm). In both cases this represented an increase of 3 weeks from the previous census figure.

Forty-three percent of Northumberland farms employed paid labour during 1980, compared to 37 percent in 1970. These

percentages were similar for the rest of the Nova Scotia farms employing paid labour (43 percent in 1980 and 38 percent in 1970).

Farm capital was examined in terms of the value of all capital, value of land and buildings, value of machinery and equipment, and the value of livestock and poultry (Table 4).

Average capital value per farm in the Northumberland Region in 1981 was $158,500 (current dollars) compared to $180,200 in the rest of the province. The combined influences of inflation and farm expansion increased average farm capital by similar factors (approximately 5-fold) in both the Northumberland Region and the remainder of Nova Scotia. Average farm values of machinery and equipment and land and buildings increased slower in Northumberland than in the rest of the province. Average livestock and poultry values, on the other hand, increased faster in the Northumberland region.

The average per farm distribution of capital between the three major classes was as follows:

	Northumberland		Rest of Nova Scotia	
Type of Capital	1971	1981	1971	1981
Land and Buildings	62%	69%	65%	71%
Machinery and Equipment	21%	17%	19%	17%
Livestock and Poultry	17%	14%	16%	12%

TABLE 4: Northumberland region and rest of Nova Scotia: Capital on farms

	NORTHUMBERLAND			REST OF NOVA SCOTIA		
	1971	1981	1981 as % of 1971	1971	1981	1981 as % of 1971
Value of capital on farms						
Total ($000)	53,984	262,163	486	152,101	635,400	418
Average per farm ($)	31,700	158,600	501	35,300	187,300	531
Value of Land and Buildings						
Total ($000)	33,263	180,473	543	98,970	452,651	458
Average per farm ($)	1,956	109,200	560	23,000	133,400	580
Value of Machinery and Equipment						
Total ($000)	11,511	45,563	396	28,357	104,725	370
Average per farm ($)	6,800	27,600	406	6,600	30,900	469
Value of Livestock and Poultry						
Total ($000)	9,206	36,127	393	24,757	78,024	316
Average per farm ($)	5,400	21,800	404	5,800	23,000	397

Source: Statistics Canada Census of Agriculture

The Northumberland relative utilization of capital shifted toward land and buildings from 1971 to 1981. In the rest of the province the shift was in the same direction. In 1981 the capital distribution was similar in both parts of the province.

3.2 Farming Activities

Hay production in the Northumberland Region accounted for 64 percent of the Region's total crop acreage in 1981 (Table 5). The area allocated to hay increased by 16 percent from the 1971 census. The rest of Nova Scotia allocated 63 percent of the total cropland to hay production in 1981. Land allocated to hay production increased by 14 percent from 1971 to 1981.

With the exceptions of wheat, rye and buckwheat, the grain area declined from 1971 to 1981 in the Northumberland Region. Rye showed the greatest increase of 606 percent. Wheat increased 15 percent while buckwheat acreage increased 40 percent. Grain corn showed the greatest decrease at 59 percent, followed by barley (30 percent). Oats for grain claimed 3,272 hectares of cropland in 1981.

The trends were not similar in the rest of the province. Oats for grain and mixed grain were the only grain crops that decreased from 1971 to 1981. Buckwheat had the greatest increase in area. Rye and grain corn also increased substantially, by 139 percent and 90 percent respectively. Oats for grain accounted for 3,460 hectares of cropland in 1981. This was followed by barley and wheat which each accounted for about 2,100 hectares of cropland.

TABLE 5: Northumberland region and rest of Nova Scotia: Field crop and vegetable area

	NORTHUMBERLAND REGION			REST OF NOVA SCOTIA		
	1971	1981	1981 as % of 1971	1971	1981	1981 as % of 1971
Area of major field crops (ha.)						
- Wheat	748	860	115	1,219	2,026	166
- oats for grain	3,701	3,272	88	3,495	3,460	99
- barley	1,921	1,336	70	1,599	2,149	134
- mixed grain	1,825	1,351	74	1,630	821	50
- rye	80	565	706	665	1,588	239
- buckwheat	40	56	140	5	26	520
- corn for grain	295	122	41	906	1,724	190
- tame hay	22,111	25,670	116	39,628	45,436	114
- fodder oats	378	561	148	1,230	1,198	97
- silage/fodder corn	1,126	756	67	2,285	2,370	104
- other fodder crops	407	341	84	421	514	122
- potatoes	91	33	36	1,321	1,512	114
- field peas	35	6	17	29	14	48
- soybeans	-	8	-	49	70	143
- tobacco	25	-	-	486	248	51
Area of major vegetable Crops (ha.)						
- all vegetables	206	520	252	2,257	2,641	117
- beans	1	5	500	875	962	110
- beets	2	23	1,150	17	19	118
- broccoli		3		2	7	350
- cabbage	13	12	92	112	193	172
- carrots	46	328	713	121	187	155
- cauliflower	4	7	175	17	33	194
- celery	-	N/A		1	N/A	
- cucumber	6	9	150	36	50	139
- green peas	1	2	200	657	664	101
- lettuce	6	4	67	41	28	68
- onions	-	8		7	5	71
- sweet corn	50	49	98	89	217	244
- tomatoes	9	17	189	40	36	90
- turnips	51	24	47	119	112	94
- other	14	8	57	68	151	222

SOURCE: Statistics Canada Census of Agriculture

Vegetable production rose from 206 hectares in the Northumberland Region in 1971 to 520 hectares in 1981, an increase of 152 percent. Carrots and sweet corn were the most commonly grown vegetables. The carrot area increased 613 percent while sweet corn remained almost constant over the decade. Turnips ranked third in area, followed by beets. Even though turnips were ranked third in area, they decreased 110 percent since 1971.

Vegetable production in the rest of Nova Scotia occupied 2,641 hectares in 1981, a 17 percent increase since 1971. Beans and green peas accounted for 62 percent of the vegetable area. The area of sweet corn rose 144 percent in the decade.

Twenty-six Northumberland farms reported greenhouses in 1981 compared to 20 farms in 1971. The operations were almost evenly distributed among the counties. The total area of greenhouses was not available for 1981. In the rest of Nova Scotia there were 135 greenhouse operations in 1981.

Eight operators reported 16 hectares of nursery products in the Northumberland Region in 1981. This was double the number of producers and six times the nursery area reported in the 1971 census. In 1981, the rest of Nova Scotia had 79 hectares of nursery products.

Total cattle numbers on Northumberland Region farms increased 17 percent from 1971 to 1981, while cattle numbers in the rest of the province rose 3 percent over the same period (Table 6). Dairy cow numbers declined slightly (1 percent) in Northumberland, compared to 16 percent in the rest of the province. The number of replacement dairy heifers rose 80 percent in Northumberland compared to 505 percent in the rest of the province.

TABLE 6: Northumberland region and rest of Nova Scotia: Livestock and poultry on farms

	NORTHUMBERLAND REGION			REST OF NOVA SCOTIA		
	1971	1981	1981 as % of 1971	1971	1981	1981 as % of 1971
Total Cattle	41,569	48,637	117	89,351	91,572	103
- dairy cows	12,899	12,659	99	28,309	23,578	84
- replacement dairy heifers	3,687	6,640	180	1,824	11,033	605
- beef cows	8,383	8,165	98	13,181	15,907	121
- replacement beef heifers[1]	2,137	2,590	122	7,155	5,538	78
- cattle on feed	2,856	5,966	209	8,596	6,652	78
Total pigs	22,814	25,181	111	56,951	114,163	201
- sows six months and over for breeding	2,406	2,664	111	5,771	11,621	202
Total sheep	13,944	17,001	122	21,893	25,985	119
Total chickens	298,100	322,000	108	2,757,700	3113,100	113
- layers over 5 months	180,000	N/A		1,027,100	N/A	
- replacement layers less less than 5 months	170,000	N/A		484,500	N/A	
	3					
Total turkeys	428	1,390	46,334	70,365	96,762	138
Total geese	289	653	153	1,984	1,342	68
Total ducks	4,200	1,239	429	1,537	2,379	155
Total mink	669	N/A		126,159	N/A	
Total rabbits		950	142	1,269	7,530	594

Source: Statistics Canada Census of Agriculture

1. Includes some heifers for slaughter in 1971

Fifty-five percent of Northumberland dairy cows were in Colchester County. Pictou County had 24 percent of the Region's dairy cows and Cumberland 21 percent.

Northumberland beef cow herds totalled 8,165 animals in 1981. This represented a 2 percent decrease from 1971 compared to a 21 percent increase in the rest of the province. In both areas the ratio of beef replacements to cows was one to three. In 1971 there were 25 replacement beef heifers in Northumberland per 100 cows and 54 per 100 cows in the rest of the province.

Pork production expanded both in Northumberland and in the rest of the province. In the Northumberland Region the total number of pigs increased 11 percent form 1971 to 1981, compared to an increase of 101 percent in the rest of the province.

Northumberland's sheep flock totalled 1,700 animals in 1981, a 22 percent increase from 1971. There were 25,965 sheep in the rest of Nova Scotia, an increase of 19 percent over the decade.

Chicken numbers increased by 8 percent in the Northumberland Region from 1971 to 1981, while in the rest of the province the chicken flock expanded by 13 percent.

The production of turkeys, geese and ducks increased substantially in the period 1971 - 1981 in the Northumberland Region. The number of turkeys rose from negligible numbers to 1,390 between 1971 and 1980. The number of geese and ducks increased 53 percent and 329 percent respectively. In the rest of the province turkey and duck numbers increased

less rapidly. The number of turkeys rose from 70,365 in 1971 to 96,762 in 1981, a 31 percent increase. The number of ducks increased 55 percent to 2,379 in 1981. The number of geese declined 32 percent from 1971 to 1981.

Tractor numbers increased 21 percent for the period 1971 - 1981 in the Northumberland Region compared to a 15 percent increase in the remainder of Nova Scotia (Table 7). In Northumberland the ratio of improved land to tractors declined slightly while in the rest of Nova Scotia the ratio increased. There were 27 hectares of improved land per tractor in 1981 in the Northumberland Region, a decline of 4 percent over the decade. In the rest of the province there were 21 hectares of improved land per tractor, an increase of 5 percent.

The distribution of tractors by size in 1981 was as follows:

Size of Tractor	Northumberland Region	Rest of Nova Scotia
Less than 50 hp.	61%	57%
50 - 99 hp.	35%	37%
100 or more hp.	4%	6%

TABLE 7: Northumberland Region and rest of Nova Scotia: Farm mechanization

	NORTHUMBERLAND REGION			REST OF NOVA SCOTIA		
	1971	1981	1981 as % of 1971	1971	1981	1981 as % of 1971
Tractors[1]	2,029	2,449	121	4,506	5,164	115
- less than 50 h.p.	N/A	1,500		N/A	2,963	
- 50-99 h.p.	N/A	863		N/A	1,913	
- 100 or more h.p.	N/A	86		N/A	288	
- hectares improved land per tractor	28	27	96	20	21	105
- tractors per census farm	1.19	1.48	125	1.05	1.53	146
Combines	126	151	120	193	151	78
- hectares of grain per combine[2]	68	50	74	49	78	159
Swathers	13	97	746	68	231	340
Balers	816	917	112	1,501	1,687	112
- small bale (200 lb)	N/A	893		N/A	1,622	
- large bale (200 lb)	N/A	24		N/A	65	
- hectares of hay per baler	27	28	104	26	24	92
Forage harvesters	109	143	131	181	274	151

Source: Statistics Canada Census of Agriculture

1. Excludes garden tractors
2. Includes grain corn

The number of combines in the Northumberland Region increased 20 percent over the decade to 151 machines in 1981. Hectares of grain per combine decreased over the same period. There were 50 hectares of grain per combine in 1981, a decline of 26 percent since 1971. In the rest of the province the number of combines decreased 22 percent to 151 combines in 1981. Hectares of grain per combine increased to 78 hectares, a 59 percent increase. The number of swathers increased sharply in both Northumberland and the rest of the province. More forage harvesters were employed in 1981 than 1971 in both areas. The increase in forage harvesters may reflect a trend toward increased feeding of corn silage through the mid-seventies. Baler numbers increased 12 percent both in the Northumberland Region and in the rest of the province over the decade. The "big bale" machines accounted for 3 percent of the Northumberland total compared to 4 percent in the rest of the province.

3.3 Farm Output

Statistics Canada categorizes Census farms in terms of the major source(s) of farm revenue. This "product type" classification is determined by the commodity or group of commodities which accounted for 51 percent or more of total potential sales from the farm. Farms with sales of $2,500 or more were classified according to product type. Mixed farms are classified according to whether livestock, field crops, or some other enterprise predominates. The "miscellaneous specialty" grouping includes greenhouses, nurseries, mushroom houses, sheep, horses, apiaries, fur farms and goats.

The number of farms with sales of $2500 or more increased 45 percent in Northumberland from 1971 to 1981 (Table 8). In the rest of the province they increased by 15 percent. In Northumberland dairy farms made up 43 percent of the farms in 1971, but by 1981 the number had declined to 31 percent. The absolute number of dairy farms with sales over $2500 increased by 4 percent. In the rest of the province, dairy farms made up 38 percent of all farms with sales over $2500 in 1971; by 1981 their share had declined to 24 percent.

Changes in the farm classification system made it impossible to derive accurate comparisons for cattle and hog farms during the 1971-1981 period. The 1971 figures for cattle farms included sheep and hog farms. Cattle farms were second only to dairy farms in number in the Northumberland Region, making up 28 percent of all farms in 1981. Cattle farms made up 31 percent of all farms in the rest of Nova Scotia.

Fruit and vegetable farms were in third place, accounting for 8 percent of all farms in 1971 and 18 percent in 1981. Comparable percentages in the rest of the province were 10 percent in 1971 and 12 percent in 1981.

The distribution of Nova Scotia farms according to volume of annual sales was examined for 1971 and 1981 despite the problems of interpretation created by inflation.

The number of farms with very small sales (less than $2,500) dropped 39 percent on Northumberland farms from 1971 to 1981, compared to 48 percent in the rest of Nova Scotia (Table 9).

TABLE 8: Northumberland Region and rest of Nova Scotia: Farms with sales of $2500 or more by product type

Census farms with sales of $2500 or more	NORTHUMBERLAND REGION			REST OF NOVA SCOTIA		
	1971	1981	1981 as % of 1971	1971	1981	1981 as % of 1971
-Total	724	1,053	145	1,844	2,116	115
-Dairy	310	323	104	709	507	72
-Cattle[1]	214	294	137	441	652	148
-Hogs		51			145	
-Poultry	34	26	76	135	100	74
-Wheat	-	4		-	7	
-Small Grains[2]	7	23	329	2	24	1,200
-Field Crops[3]	4	13	325	72	61	85
-Fruit and Vegetables	60	185	308	190	264	139
-Misc. Specialty	14	76	543	95	246	259
-Mixed	51	58	114	116	110	95
-Livestock Combination	31	35	113	46	57	124
-Field Crop Combination	2	1	50	6	8	133
-Other Combination	18	22	122	64	45	70
-Forestry	30			84		

Source: Statistics Canada Census of Agriculture

1 Includes cattle, hogs and sheep in 1971.
2 Excludes wheat farms
3 Excludes small grains farms

TABLE 9: Northumberland Region and rest of Nova Scotia: Farms by sales class

	NORTHUMBERLAND			REST OF NOVA SCOTIA		
	1971	1981	1981 as % of 1971	1971	1981	1981 as % of 1971
No. of Farms by Sales Class						
$250,000 and over		34			129	
$100,000 - $249,999		102			250	
$ 50,000 - $ 99,999	49[1]	119		164[1]	269	
$ 25,000 - $ 49,999	74	112	152	209	230	110
$ 10,000 - $ 24,999	179	214	120	525	387	74
$ 5,000 - $ 9,999	182	217	120	439	417	95
$ 2,500 - $ 4,999	240	255	105	507	434	86
Less than $2,500	976	600	62	2,444	1,276	53
Institutional Farms	4			16		

Source: Statistics Canada Census of Agriculture

[1] Farms with sales of $50,000 or more in 1971.

The number of Northumberland farms in all other sales classes increased during the decade. These increases ranged from 6 percent to 52 percent with the total increase being 15 percent. In the rest of Nova Scotia, the numbers of farms in the $2,500 to $49,999 grouping declined. The decreases ranged from 5 percent to 26 percent, with a total decline of 16 percent. The sales class $25,000 - $49,000 increased 10 percent from 1971 to 1981.

The most dramatic change in farm numbers occurred in the $50,000 and over sales class. In Northumberland these farms increased by a factor of 5 (49 in 1971 vs. 255 in 1981) while in the rest of Nova Scotia there was a four-fold increase (164 in 1971 vs. 648 in 1981).

4.0 OPPORTUNITIES AND CONSTRAINTS RELEVANT TO AGRICULTURAL DEVELOPMENT IN THE REGION

4.1 Introduction

Regional development in agriculture is usually seen in terms of an opportunity to expand production of a commodity already produced in the Region, or to begin to produce a commodity not previously associated with the Region. Often, however, development may be seen as development of a new technology, or the application of existing technology (e.g. farm drainage), and these changes may affect the production of more than one commodity. The focus in this report will be on commodity opportunities, although technology aspects will be noted.

Opportunities are sometimes viewed in terms of dramatic breakthroughs. These breakthrough opportunities are few in an established agricultural system. Therefore, an opportunity sometimes should be seen as retaining a market, or living with a slowly expanding market, for a product that is important in the Region. Supply management products, for example, may be important to a Region in terms of a contribution to the Region and to individuals producing those products. Retention of the right to produce, despite no growth or slow growth, may be regarded as an important contribution and the retention of these products at as high a level as possible may be regarded as a development opportunity - as a decrease may lead to frenetic efforts to develop less promising products. Due note will be taken, therefore, of the place of established commodities in the Region.

Commodity information in this report was examined for the following commodity groups:

1. National supply management commodities - dairy, chickens, eggs, turkeys.
2. Non supply management livestock commodities - beef, hogs, sheep.
3. Field crops.
4. Fruits.
5. Vegetables.
6. Other commodities.

Constraints to agricultural development were examined in terms of the resource base of soil and climate, the resources of labour and capital that were applied to the resource base, and the marketing system.

Nova Scotia agriculture operates under an overriding constraint which requires stating lest an examination of regional agriculture lead to an emphasis on the overriding constraint, and overlook opportunities that will exist in the Regions. The overriding constraint is locational in nature, as Nova Scotia producers are a long way from large consumer markets, and transportation costs make it difficult for producers to be competitive in those markets. The locational constraint is reinforced by another constraint - a soil and climate constraint that limits the range of products that can be produced in volume. The result is a provincial agricultural economy that:

a. Can not supply (on a net basis) the food requirements of Nova Scotia's population.

b. Can export from the province substantial amounts of some agricultural products - exports that partially offset large imports of grain and tropical food products.

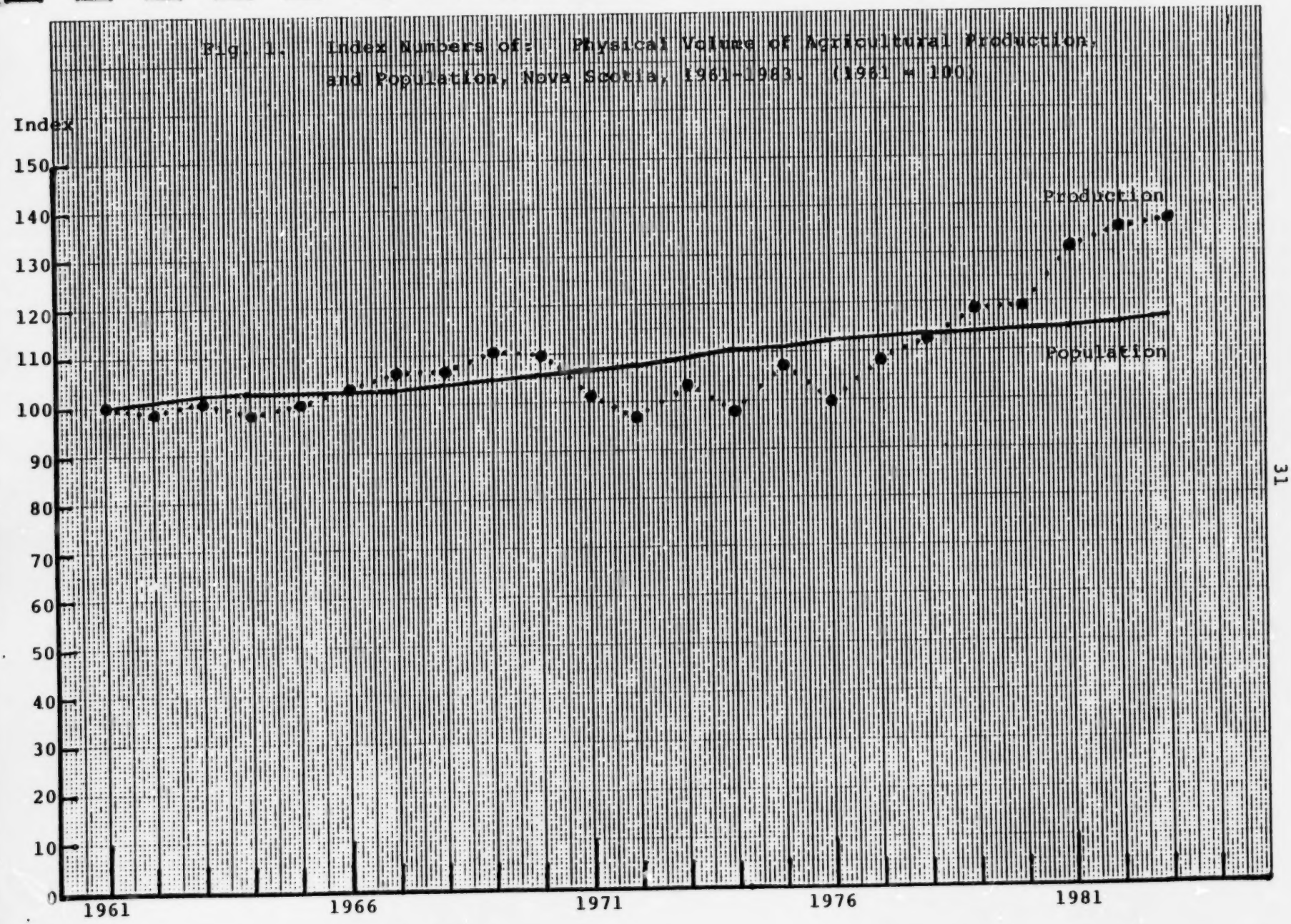
c. Relies on the domestic market of Nova Scotia for long-term growth.

The reliance on the provincial market can be illustrated by a tendency for the trend lines for population growth and agricultural production to run fairly close together (Fig. 1). In some periods agricultural production tended to remain below the population line, at other times it was above. The agricultural production line trended upward more steeply than usual after 1976, probably as a result of a more profitable agriculture in the late 1970's, some government incentive, and a lower value Canadian dollar in recent years.

The Northumberland Region is a production Region of Nova Scotia for agricultural output. The Region's production, as measured by agricultural sales, was 25.3 percent of the province's production in 1980, a definite increase from the 23.2 percent of 1970. Within the Region the output of Cumberland County increased from 7.9 percent of Nova Scotia's production in 1970 to 9.5 percent in 1980, and Colchester County increased from 10.3 to 10.8 percent. The proportion remained constant in Pictou County.

The decade of the 1970's was a period of growth in Nova Scotia agriculture, although most of the growth was achieved in the second half of the period. Variations

Fig. 1. Index Numbers of: Physical Volume of Agricultural Production, and Population, Nova Scotia, 1961-1983. (1961 = 100)



Source: Statistics Canada

in physical output from year to year made it difficult to measure increases, but the percentage increase in physical production was 8.4 from 1970 to 1980, and 17.7 from 1971 to 1981.

Physical output data were not available on a regional basis, but agricultural sales may be used as a rough measure of growth, when such sales for 1970 and 1980 were expressed in constant 1980 dollars.

Sales growth in Cumberland County was 67 percent in the 1970 to 1980 decade. This was a large increase as the provincial growth was 38 percent. Sales growth in Colchester County was also large, at 45 percent. Growth in Pictou was 37 percent, about the same as the provincial growth. The Northumberland Region's growth was 51 percent and the Region accounted for an estimated 31 percent of the growth in Nova Scotia's agricultural sales from 1970 to 1980.

4.2 National Supply Management Commodities

Commodities produced under the national supply management system generally provide producers with relatively good income compared to incomes available from producing many other products. Growth in the market tends to be slow, and subject to market trends and policy decisions arising from federal-provincial-producer agreements. The importance of the supply management products, however, in total agricultural output gives a real incentive to any Region to retain this production within the Region.

Dairy: Although dairy cow numbers in Nova Scotia and the Northumberland Region have decreased, increased milk production per cow has increased total milk output. Production efficiency was high in the dairy industry, as output per cow increased at a 2.5 percent annual rate, well above the Canadian average. Fluid sales have increased steadily to supply the Province's requirements and some out-of-Province fluid sales. Milk for the manufacturing market has increased at about the same rate in the last two decades and supplies a portion of the manufacturing milk market of the Province.

The Northumberland Region may have a larger share of the milk market in recent years, if cow numbers can be used as a measure. Dairy cow numbers in the Region in 1971 represented 31.3 percent of cows in the Province and this increased to 34.9 percent in 1981.

Constraints on the industry's further growth include those arising from the supply management system whereby the Province entered a national system and obtained advantages of industry stability, and income growth for producers, but had to give up a possibility of increased market share. This constraint results in cost problems in the milk manufacturing area, as Nova Scotia's only cheese plant operated at only 45 percent of capacity when the Province was within the Market Supply Quota.

A milk marketing review committee identified other problems of communication and organization in the industry. These problems included a recognition that demand for milk may decline, inconsistencies in the way dairies deal with milk

shipments to Newfoundland, and differences in payments made to producers by the six dairies.

Hotels, restaurants and institutions purchased only 15 to 25 percent of their processed dairy products (cheese, yogurt, etc.) from Nova Scotia sources. Opportunities existed for increasing the market share but the constraint was the supply of milk awarded to Nova Scotia as its share of national quota.

Nova Scotia might have an opportunity to produce ultra high temperature products as the province has the only ultra high temperature plant in the Atlantic Provinces. The constraint is that negotiations are necessary with other provincial milk boards as ultra high temperature milk is in the same category as fresh milk.

Further constraints at the marketing level include:

a. Low per capita sales of cottage cheese and yogurt in markets in the Atlantic Provinces that are supplied from Nova Scotia.

b. Some feeling that many consumers may have a negative attitude to milk based on leak prone packages, high spoilage, inferior taste, and too many additives.

Poultry: Production of poultry meats is one of the most efficient segments of the provincial agriculture industry. Poultry meats,surplus to Nova Scotia's requirements,are exported to P.E.I., Newfoundland and other parts of North America. Production in the early 1980's was about 50 percent higher than in 1971.

Provincial egg producers, historically, supplied both local and export demands, but the production level in the early 1980's was about the same as in the early 1970's.

Data are inadequate to determine exactly the position of the Northumberland Region in the poultry industry. In 1971 the Region had 9.8 percent of the Province's chickens, and 9.4 percent in 1981. Turkey production was very small in the Region.

The centralization of much of the poultry industry, the factory type character of the enterprises, and the supply management aspect, allow the industry to serve Nova Scotia in an organized way. Excess production can be shipped to other provinces in the Atlantic area. As poultry production occurs usually near the region in which it is marketed, little opportunity exists for further export growth.

Constraints include a vulnerability to changes in production costs, especially energy and feed, and an inability to fully service the demands for poultry products by Nova Scotia consumers. Hotels, restaurants and institutions probably obtain 90 percent of their eggs within the province, 80 to 90 percent of their chicken and only 25 to 30 percent of their turkey requirements. The size of Nova Scotia's quota allotment for chickens and turkeys is an overriding constraint on meaningful enlargement of the market.

4.3 Non-Supply Management Livestock and Livestock Products

Beef: Nova Scotia imports large amounts of beef as the province produces only about 25 percent of its requirements. Nova Scotia's beef industry has made modest progress in

recent years in the face of strong competition from other areas, areas that could market a high value product in Nova Scotia despite high transportation costs. Generally beef production is a part-time or secondary farm venture, but there has been an increase in the number of larger specialized operations.

The Northumberland Region had 39 percent of the Province's beef cows in 1971 and 34 percent in 1981, as cow numbers in the Region decreased from 8,383 to 8,165 while the provincial numbers increased from 21,564 to 24,072 in the decade. All Counties in the Region had substantial numbers of beef cows.

Many producers in Nova Scotia regard beef production as an opportunity, in spite of a long period of relatively low returns. Part-time farmers, and producers using beef as a secondary enterprise, use cattle to employ resources that would otherwise have been unused. In addition there is a large potential market as the Province produces only a small percent of its high quality beef requirements and only half of its boned beef needs. Hotels, restaurants and institutions purchase less than 25 percent of their volume from Nova Scotia sources. Feeder calves shipped from the province for finishing offer an opportunity for finishing within Nova Scotia. Nova Scotia has available suitable land and a favourable climate for pasture and hay production. Increased production in the province should not affect price levels.

Constraints hindering any rapid expansion of beef production in the Northumberland Region include:

a. A period of low prices has led to pessimism in the industry.

b. Other areas, both national and international, have a competitive advantage in beef production in the form of cheaper costs and a structure for quality inspection and marketing.

c. Beef producers may not be able to rely on land prices being low enough to provide profitable operations - since the beef sector is most sensitive to land prices.

d. The dispersed and low-scale nature of the industry hinders extension and educational efforts to improve the industry.

e. The marketing structure is not oriented to readily accepting or handling Nova Scotia beef. Restaurants use large amounts of preportioned and frozen beef and the two preportioners purchase only federally inspected products and use a considerable quantity from outside the province. Present federal inspection facilities might be inadequate to handle significant additional quantities of Nova Scotia beef, although there are differences of opinion on that matter. Processing plants would have to meet federal inspection standards to compete with out-of-province products in retail stores.

f. Consumers no longer regard beef as highly as they did ten years ago in terms of nutrition and value for money - therefore significant gains in consumption are doubtful.

Pork: Nova Scotia's pig numbers increased greatly from 1971 to 1981, but a slower growth in the Northumberland Region decreased its share of the provincial total from 29 to 18 percent. In 1981 Colchester County had almost half of the Region's pig population.

Relatively low prices have put pressure on the industry in recent years. Nova Scotia leads all other provinces in the quality of hogs processed. The province is 100 percent self-sufficient in meeting fresh pork requirements and probably is over 60 percent self-sufficient in meeting all pork consumption requirements. An opportunity exists to raise this percentage as local pork is preferred in the provincial marketplace - this preference arising from a quality product, and a freshness of product because of the local production.

Growth was high enough in the Nova Scotia hog industry by 1982-83 to require the shipment of over 50,000 hogs to New Brunswick packers as local facilities could not handle them.

Constraints to expanded production include:

a. Feed costs are high relative to costs in Ontario and Quebec.

b. Large capital construction costs are involved in expanding existing units or establishing new production units.

c. The rapid changes in the hog industry brought about by technological advances requires an emphasis on technology transfer to keep industry people up-to-date.

d. Swine operations increasingly require the services of trained managers and swine farm herdsmen.

e. Losses still occur from bruising and stress as animals move through the marketing system.

f. Low price and profit levels in recent years have imposed the largest constraint on the opportunity for expansion. The price structure for the whole red meats industry induces great uncertainty at the farm level.

g. Processing facilities are not adequate.

Sheep: Sheep numbers in the Northumberland Region represented an important 39 percent of the provincial total in 1971 and 40 percent in 1981. Pictou County had 40 percent of the Region's sheep in 1981.

Sheep numbers increased during the 1970's and stabilized in the early 1980's. Sheep production is underdeveloped and small in scale, with many small operations and few specialized operations, although larger units are increasing in number. Few full-time farmers are totally dependent on sheep in the Northumberland Region.

In addition to the structural constraints, other constraints include:

a. Any expansion involves sizable expenditures for handling facilities and fencing.

b. Low prices of the 1980-83 period have precipitated cutbacks in Nova Scotia, Canada, and the United States.

c. The marketing system has disadvantages associated with slaughtering facilities and uneven movement to market.

d. Suppliers have difficulty dealing with large retail organizations because of the small and inconsistent supplies.

e. The availability of competitive supplies from other sources, including Oceania, imposes a severe restraint on expansion. Consumers accept imported frozen products.

4.4 Field Crops

The Northumberland Region contained 22.5 percent of the Province's wheat, rye and grain corn area in 1981, as compared to 28.7 percent in 1971. Hectares in these three crops in the Region increased by 38 percent in the decade, while the increase in the rest of the province was 91 percent. The rate of increase in the Region was fairly similar in all three counties and Colchester and Cumberland had similar areas in 1981 while Pictou was much smaller.

The area of traditional fodder crops decreased, as a proportion of Nova Scotia's fodder crops, from 38.5 percent to 37.3 percent.

Organized marketing boards are influential in the marketing of Nova Scotia's grains and the Provincial Grain Commission operates three handling and storage operations. Hard winter wheat goes to the milling trade,grain corn to local feed mills and a distillery, and rye goes to a distillery and export milling markets. As a result a grain industry is developing in Nova Scotia that produces grain for several markets.

Seventy-nine percent of farm cash income on Nova Scotia farms in 1981 came from livestock and livestock products. Very large amounts of grain and forage crops were necessary to generate that output. As a result of the Feed Freight Assistance Act (1941) Nova Scotia producers were able to obtain cheaper grain than previously, and local grain growing was discouraged in many areas. Imported grain increased and made up 79 percent of Nova Scotia's feed grain requirements by 1981. Local Production of

cereal grains increased by one third after 1960, partly as a result of various incentive programs, but the increase was less than the increase in livestock.

Higher freight rates and uncertainty as to long-term plans for feed freight assistance have created an opportunity for the large scale development of a cereal grain industry that will reduce dependence on western grains. Livestock producers will be encouraged to grow more of their own grain requirements and cash sales should increase. The necessary resources of land, labour and capital could be utilized for replacement of imported grain on a large scale. Important elements of a successful replacement program would include early seeding, improved drainage, quality seed, adequate and timely fertilization, disease and pest control, careful harvesting, proper storage and marketing facilities. Temperature, heat units, and the frost free period in Nova Scotia are generally favourable for cereal production. Class 2 and Class 3 soils are suitable for cereal production and large areas of these classes have never been cleared, or have reverted back to forest. One key to profitable grain production in Nova Scotia is the ability to obtain consistently high yields, and several constraints impede the attainment of that objective.

Constraints to large scale replacement of western grains include:

a. Soil constraints include low natural fertility and low pH (acid soils), excessive stoniness, poor soil structure, excess water, adverse topography, and soil degradation. High rainfall leads to drainage, plant disease and trafficability problems.

b. Sophisticated management will be required to deal with the soil constraints, and this requires a high level of technology transfer.

c. On-farm facilities for drying, storing and milling will be required.

d. A lack of skilled farm labour is an important deterrent to increased production, as specialized labour is required for farm operations based on machinery and chemical utilization.

e. Often areas where cereals could be grown are small and isolated.

f. Land tenure patterns indicate that many land holdings are small or unavailable for grain production.

g. There is uncertainty as to government transportation policy.

4.5 Fruits

The tree fruit sector of Nova Scotia's agriculture has concentrated in the Valley Region. In 1981, the Valley Region had 97 percent of the total tree fruit area in Nova Scotia and 98 percent of the apples. The Northumberland Region only had .33 percent of the province's tree fruits area in 1981 as only 16 hectares of apples were enumerated. The Region's share of the small fruits area of Nova Scotia was 81 percent in 1981, a large increase from the 67 percent of 1971. Cumberland County had 44 percent of the small fruits in 1971 and this proportion increased to 72 percent in 1981 as the blueberry industry expanded rapidly.

The production of strawberries for the fresh market may have reached a saturation point and any further plantings will

be geared mainly to population growth - unless processing offers a further opportunity.

Constraints imposing limits on the increased production of strawberries in the Northumberland Region include:

a. There is a need to develop and introduce a mechanical harvester for strawberries so that expansion can occur in the processing part of the industry and make Nova Scotia competitive with imported products from Poland, Mexico and the United States. A combination of the solid bed culture and mechanical harvester offers some opportunity of overcoming the competitive advantages of other producing areas. Nova Scotia producers have not been interested in the prices paid for processing berries, but a reduction in harvesting costs could make this market more attractive.

b. Other production constraints for strawberries include:

- continuing problems in combatting disease in strawberry plantings,
- the need for a mechanical raised bed shaper,
- the high cost of irrigation equipment constrains the purchase of this equipment,
- the lack of new cultivars to extend the strawberry season.

c. There may be problems at the processing level, including a need for additional facilities, including re-designed or overhauled strawberry de-hullers. Also energy costs will be high in plants with expensive cold storage facilities.

Nova Scotia's lowbush blueberry industry has expanded steadily since 1950. Growing on land unsuited for most types of agriculture this crop provides relatively high net income. Adequate processing facilities and markets in the Atlantic provinces, Europe and the United States have encouraged growth. The use of refrigerated containers assisted marketings in Europe. Most of the crop is sold for processing and continued expansion of the industry may depend on developing more consumer uses for blueberries.

The bulk of lowbush blueberry production in Nova Scotia, perhaps as high as 80 percent, comes from Cumberland County, and additional areas are in Colchester and Pictou.

Constraints to expansion include:

a. Production level constraints include relatively high costs associated with clearing potential blueberry sites and waiting the three to five years for full production; the need for costly specialized machinery, and the need for large amounts of capital to apply irrigation to blueberries for yield enhancement and frost protection.

b. Rapid expansion puts a premium on the need for research and technology transfer to keep pace with new areas and new producers.

c. The requirement for both skilled and unskilled labour in fairly large amounts could be a constraint as the industry expands.

d. A dependence on export markets for an expanding industry makes the industry vulnerable to tariffs in Europe and the United States, and to changes in exchange rates. This means extra efforts are necessary to reduce costs and develop new markets so that momentum can be maintained.

Constraints generally applicable to any of the small fruits include:

a. Competing sources provide hotels, restaurants and institutions with most of their fresh fruit salad and these supplies can only be displaced by Nova Scotia produce through a co-ordinated effort.

b. Hotels, restaurants and institutions purchased only 15 to 30 percent of their in-season supplies of fresh fruit and vegetables from Nova Scotia sources, and this proportion dropped to less than 10 percent for out-of-season purchases. Processed purchases from Nova Scotia sources were higher, 60 to 70 percent of the total.

c. The present marketing system for small fruits is difficult to co-ordinate and opportunities are missed to provide customers with a continuous supply of a quality product.

4.6 Vegetables

Seventy-six percent of the vegetable sector of Nova Scotia's agriculture is concentrated in the Valley Region and the remainder is dispersed fairly widely across other regions. In 1981 the Northumberland Region had 16.5 percent of the total vegetable area in Nova Scotia, compared to only 8.4 percent in 1971. Within the Region Cumberland County had 64 percent of the vegetables in 1981.

The vegetable area in the Region was only 29 percent of the fruit area, but a larger range of commodities were produced. Some vegetables increased substantially during the decade, and the carrot area went from 46 to 328 hectares. Most of

the others remained constant, or increased slowly because of low levels of processing and imports of fresh seasonal produce. Some crops, like lettuce were particularly subject to competition from imports.

A few vegetables are produced for fresh and processing markets and slightly more for storage. A larger number are fresh truck vegetables. There appear to be development opportunities in all three groups, although these are difficult to identify because of the large number of vegetables involved. Development opportunities have been identified for fresh vegetable sales to retail and wholesale operations in Nova Scotia if specified quantity, quality and price conditions can be met.

Constraints to increased production include:

a. At the production level major expenditures are required to obtain well drained land, and irrigation systems to protect against frost and to provide water in mid summer. Specialized machinery is needed to increase efficiency and reduce the requirements for seasonal labour.

b. Cooling facilities are necessary for some vegetables to retain quality, and not enough of these facilities are available.

c. Grading, washing and packaging is on an individual basis, making it difficult to obtain quality and volume.

d. Nova Scotia producers can not usually meet the requirements of the few large buyers for large volumes of quality produce over an extended time period.

e. The major constraint remains that imposed by competition from imported produce.

4.7 Other Commodities

The greenhouse industry in Nova Scotia produces cut flowers, potted plants, bedding plants, and greenhouse vegetables. Fairly similar amounts of space are devoted to each product. The area peaked in 1973 and declined as energy costs increased. The Northumberland Region had one quarter of the greenhouse area in 1971 but probably has less now. Constraints of high energy costs, competition with vegetable imports, and high capital costs for new technology restrict any opportunity for real expansion. About two-thirds of the greenhouse area has been converted to wood fuel for heating.

The nursery business expanded rapidly in the 1960's and 1970's and there is room for further expansion as this industry, in the consumer's mind, is associated with the quality of life. The Northumberland Region had about 30 percent of this industry in 1977.

Historically the apiculture industry has been centred in the Valley Region as climate, bee pasture, and closeness to the orchard industry offered encouragement. The Northumberland Region, however, has a large number of beekeepers. The industry expanded as both commercial and hobby producers increased in numbers. Honey production is insufficient to meet provincial demand, but some preference for the local product offers an opportunity for expansion. As orchards and small fruits expand in area the apiculture industry will also expand. Constraints include the lack of bee pasture, bear depredation, diseases, parasites, need for specialized equipment, and a lack of co-ordination in honey marketing.

Maple products have more than doubled in production since 1971. The Northumberland Region is the main production area and production can be expanded much more. At present only a small proportion of sugar maple land in the Province, or in Northumberland, is being tapped for maple production. Climate is not a limiting factor either.

Constraints to rapid expansion include:

a. There is a high cost for modern equipment, such as vacuum tubing systems and reverse osmosis machines.

b. New technology requires an emphasis on technology transfer expenditures, a basic program of research and demonstration, and attention to management practices.

c. Consumers are not knowledgeable about maple syrup, and only a small proportion buy pure maple syrup. Nova Scotia producers, however, can not supply the Nova Scotia market and the market is not a constraint as yet.

4.8 Other Constraints

The Northumberland Region has been described in terms of commodity opportunities and constraints on the further expansion of various commodities. There are general constraints which apply to most commodities and which have not been consistently mentioned thus far.

These constraints include:

a. There may be a lack of research on varieties, production techniques, marketing structure, market opportunities, and use of the land, labour and capital resources.

b. There may be an inadequate system for technology transfer.

c. There may be a lack of service organizations, either business or government, to provide input services or marketing services.

The Region appears to be fairly well serviced by firms providing inputs to the farm production process. The answer is not as clear for marketing services as the scale of firm necessary for some functions (e.g. slaughtering and processing plants) will lead to a situation of inadequate service from the point of view of many individual producers.

4.9 Summary

The Northumberland Region has 36 percent of Nova Scotia's improved arable land, 25 percent of agricultural sales, and had the largest rate of growth in sales in the 1970's. Substantial areas of good soil, and a fairly good climate, give a capability of producing most agricultural products. The Region has a larger output of milk, beef, sheep, fodder crops and small fruits than any other Region. One of the success stories of agriculture in Nova Scotia was the growth in lowbush blueberry production.

Opportunities are available for further expansion, notably in blueberries, some vegetables, fodder crops and grain. Improved land is only 12 percent of total arable land and large amounts of arable land have not been cropped, or have reverted to non-agricultural uses. An opportunity exists to utilize more land,and improve production on existing improved land, to produce large amounts of grain and replace imports of western grain. In addition to blueberries and grain, other opportunities exist. Probably expansion will be distributed over several commodities, in addition to blueberries and grain. It will be a matter of reinforcing success, of encouraging development in a Region that had a good growth record in the 1970's.

Constraints are present for all commodities, and at all stages of the production and marketing system. Some of the most noticeable constraints are at the marketing level, as there is difficulty matching many farm production and marketing units with the needs of large buying organizations.

5.0 APPENDICES

5.1 Bibliography

1. Advisory Committees on Cereal, Protein, Corn and Forage Crops, Field Crop Guide to Variety and Pesticide Selection, Atlantic Provinces Agriculture Services Co-ordinating Committee., 1985.

2. Agriculture Canada, and Nova Scotia Department of Agriculture and Marketing, Government Incentive and Support Program Avaialable to the Nova Scotia Agri-Food Sector., 1984.

3. Agriculture Canada, and Nova Scotia Department of Agriculture and Marketing, Report of Task Force on Agricultural Development, 1981 - 1986.

4. Agriculture Canada, Commodity Analysis Tree Fruits in Nova Scotia, Agriculture Canada, Nova Scotia Department of Agriculture and Marketing; 1981.

5. Agriculture Canada, Nova Scotia Agriculture and Marketing, Agriculture and Food Industry Development Agreement 1982-1987.

6. Agriculture Canada., Production Base and Production Potential of the Eastern Grains Industry., 1982.

7. Agriculture Canada., Nova Scotia Department of Agriculture and Marketing, Apiculture., Agriculture Canada, 1981.

8. Agriculture Canada., List of Federal Livestock and Dairy Plants in Nova Scotia., 1985.

9. Agriculture Canada., List of Registered Hatcheries Nova Scotia., 1985.

10. Agriculture Canada., List of Licensees Fruit and Vegetables., 1984-1985.

11. Agriculture Canada., Working Papers - on three Regions, by M. Van de Riet, D. Dunlop.

12. Agriculture Canada., The Red Meat Industry in the Maritimes, 1984-1990, 1984.

13. Arbour, J. H., Residual Arable Land in the Maritime Provinces, Lands Directorate, Environment Canada, 1981.

14. Bennett, R. A., Annual Report Western Nova Scotia and Kings County., Nova Scotia Department of Agriculture and Marketing, 1983.

15. Coburg Consultants Ltd., Roadside Market Study, Agriculture Canada, 1984.

16. Connor, M. L., Johnson, M. A., Report on Investigative Travel to Denmark and Finland: Fox Industry., Agriculture Canada, 1984.

17. Cotterill, R. R., Cape Breton Agriculture: An Overview., Agriculture Canada, Regional Development Branch, 1984.

18. Craig, D. L. et al., Berry Crops, A Commodity Analysis for Nova Scotia., Agriculture Canada and Nova Scotia Department of Agriculture and Marketing., 1984.

19. Cross Roads Blueberry Co-operative Ltd., Cross Roads Co-operative Fresh Blueberry Marketing Report., Agriculture Canada, 1984.

20. Deloitte Haskins and Sells, Economic Feasibility of New Marketing Facilities for Fresh Vegetable and Berry Crops in Selected Regions of Nova Scotia., Agriculture Canada, 1984.

21. Dunlop, Diane., Nova Scotia Sheep Sector Profile., Agriculture Canada, 1984.

22. Dzikowski, P., Nova Scotia Agroclimatic Atlas, Nova Scotia Department of Agriculture and Marketing, 1984.

23. Embree, C. G., Greenhouse Industry., Nova Scotia Department of Agriculture and Marketing, 1981.

24. Financial Post, Fur Under Fire., February 16, 1985.

25. Forsyth, F. R.,Highbush Blueberry Plantings of Nova Scotia., Agriculture Canada, 1985.

26. Forsyth, F. R., Annapolis Valley Apple Storage and Packing Facilities Evaluation Study, Agriculture Canada, 1984.

27. Finley, G., Johnson, M., Oxley, J., Fur Farming-NovaScotia,1981.

28. Farrell, P., Rideout, P., McIsaac, D., Nova Scotia Commodity Analysis-Maple, Agriculture Canada, 1981.

29. Fullerton, G., Hall, I., et al., Report on Wisconsin Cranberry Growing., Agriculture Canada, 1984.

30. Goit, J. B., Kunelius, H. T., European Fact-Finding Mission Forage Systems., Agriculture Canada, 1984.

31. Gunn, Campbell, et al., Vegetables A Commodity Analysis for Nova Scotia, Agriculture Canada and Nova Scotia Department of Agriculture and Marketing, 1984.

32. Gunn, T. C., Commodity Analysis High Energy and Protein Feed Nova Scotia, Agriculture Canada, 1981.

33. Kinsman, G. B.,An Overview of Nova Scotia Agriculture-Production and Marketing-Commodity and Regional Analysis. Nova Scotia Department of Agriculture and Marketing, 1983.

34. Milk Marketing Review Committee, Report of the Milk Marketing Review Committee, Agriculture Canada, 1984.

35. Nova Scotia Department of Agriculture and Marketing, Agricultural Statistics, 1982.

36. Nova Scotia Department of Agriculture and Marketing, The Land Resource Situation of Nova Scotia Agriculture, Marketing and Economics Branch, Nova Scotia Department of Agriculture and Marketing, 1984.

37. Nova Scotia Provincial Grain Commission, Annual Report, Year Ending, March 31, 1984.

38. Nova Scotia Agricultural College, Cereal Grain Production, 1984.

39. Nova Scotia Department of Agriculture and Marketing and Nova Scotia Federation of Agriculture, Feed Situation Report of the Joint Feed Committee of the Nova Scotia Federation of Agriculture and Marketing, 1981.

40. Nunn, T., Oxley, J., Commodity Analysis Beef-Nova Scotia., Agriculture Canada, and Nova Scotia Department of Agriculture and Marketing.

41. Peill, J., Milling Wheat Seeds Markets Identification Study., Agriculture Canada and Minas Seed Co-operative Ltd., 1984.

42. Pierce, Fred., Livingstone, Dave., Jacquard, Elizabeth, Agricultural Directory 85. Nova Scotia Department of Agriculture and Marketing, 1985.

43. Price Waterhouse Associates, Requirements for Fresh Marketing in Nova Scotia, Agriculture Canada, 1984.

44. Price Waterhouse Associates, A Market Analysis of the Food Service Sector in Nova Scotia. Agriculture Canada, 1984.

45. Porter, W. L., Newfoundland Hay Marketing Study, Agriculture Canada, 1984.

46. Robinson, D. E., Trends in Nova Scotia Agriculture 1970-1980, Nova Scotia Department of Agriculture and Marketing, 1982.

47. Robinson, Dave., Economics Report - The Sheep Industry in Nova Scotia., Nova Scotia Department of Agriculture and Marketing, 1979.

48. Ryle, S. G., Brookside Abattoir Acquisition Feasibility Study, Agriculture Canada, 1984.

49. Ryle, S. G., Yarmouth County Marketing Feasibility Study., Agriculture Canada, 1984.

50. Swinkles, P. M., Report on Hay Compressors, Agriculture Canada, 1984.

51. Task Force Report, Task Force for Horticulture, Agriculture Canada, 1980.

52. Vegetable and Potato Producers Association of Nova Scotia, Co-operative Vegetable Marketing in the United Kingdom, Agriculture Canada, 1984.

53. Webster Farms Ltd., Solid Bed Strawberry Culture Evaluation, Agriculture Canada, 1984.

Soil References

54. Agriculture Canada Soil Research Institute, Research Branch., Soils of Nova Scotia, (Map) 1972. Scale 1:450,000

55. Environment Canada, Lands Directorate, Atlantic Provinces, Soil Capability for Agriculture, (C.L.I. Map) 1974. Scale 1:1,000,000

56. Comeau, M. A., Land Capability for Agriculture in Nova Scotia, A County Breakdown, Lands Directorate, Fisheries and Environment Canada.

57. Hilchey, J. D., Canada Land Inventory, Report No. 8 - Soil Capability Analysis for Agriculture in Nova Scotia, Department of Regional Economic Expansion, 1970.

58. Nowland, J. L., The Agricultural Productivity of The Soils of The Atlantic Provinces, Soil Research Institute, Agriculture Canada, 1975.

5.2 Persons Contacted - (Alphabetical)

1. R. A. Bennett, Regional Agricultural Representative, Nova Scotia Department of Agriculture and Marketing, Kentville.

2. P. Dzikowski, Agricultural Climatologist, Soils and Crops Branch, Nova Scotia Department of Agriculture and Marketing, Truro.

3. T. C. Gunn, Development and Analysis Manager, Regional Development Branch, Agriculture Canada, Truro.

4. D. Holstrom, Pedologist, Soil Surveys, Agriculture Canada, Truro.

5. J. D. Johnson, Director, Soils and Crops Branch, Nova Scotia Department of Agriculture and Marketing, Truro.

6. G. F. MacKenzie, Regional Agricultural Representative, Nova Scotia Department of Agriculture and Marketing, Truro.

7. H. W. McKean, District Manager, Food Production and Inspection Branch, Agriculture Canada, Kentville.

8. B. J. McLaughlin, Statistician, Atlantic Region, Statistics Canada, Truro.

9. N. L. Murphy, Fruit and Vegetable Inspection, Food Production and Inspection Branch, Agriculture Canada, Kentville.

10. J. C. Oxley, Economist, Regional Development and International Affairs Branch, Agriculture Canada, Truro.

11. D. Robinson, Economist, Nova Scotia Department of Agriculture and Marketing, Halifax.

12. A. A. Rovers, Director, Nova Scotia Farm Loan Board, Nova Scotia Department of Agriculture and Marketing, Truro.

13. A. G. Sorflaten, Regional Marketing Officer, Marketing and Economics Branch, Agriculture Canada, Kentville.

14. D. J. Walmsley, Poultry Inspection, Food Production and Inspection Branch, Agriculture Canada, Kentville.

15. G. M. Weaver, Director of Research, Research Branch, Agriculture Canada, Kentville.

5.3 Regional Census Data By County

Table A1: Distribution and disposition of arable land, by County, in Northumberland Region, of Nova Scotia

	Colchester	Cumberland	Pictou
Amount of:			
1971 Improved Arable Land (ha)	21,467	20,861	14,392
Residual Arable Land (ha)	158,571	211,058	128,951
Total Arable Land (ha)	180,038	231,919	143,343
Improved Land as Proportion of Total Arable Land (%)			
1971	11.9	9.0	10.0
1981			
Proportion of County's Arable Land Classed as:			
Class 2 (%)	18	22	14
Class 3 (%)	54	46	52
Class 4 (%)	28	32	34
	100	100	100
County's Proportion of Region's:			
1971 Improved Arable Land (%)	37.8	36.8	25.4
Residual Arable Land (%)	31.8	42.3	25.9
Total Arable Land (%)	32.4	41.8	25.8

Source: Derived From Arbour, J. H., Residual Arable Land in The Maritime Provinces, Land Directorate, Environment Canada, 1981

TABLE A2: Farm numbers and land utilization by county in Northumberland Region of Nova Scotia

	Colchester		Cumberland		Pictou	
	1971	1981	1971	1981	1971	1981
Total No. of farms	602	549	586	612	516	492
No. of Farms by land area						
53 ha.	185	213	207	259	208	215
53 - 96 ha.	165	122	158	127	174	139
97 - 161 ha.	130	109	117	110	83	91
162 - 226 ha.	69	46	41	51	29	26
226 ha.	53	59	63	65	22	21
Total are of farms (000 ha.)	64.0	56.3	65.2	73.3	40.9	39.2
No. of farms by improved land area						
4 ha.	55	81	92	85	48	40
4 - 27 ha.	260	214	268	265	281	246
28 - 52 ha.	155	103	118	123	125	110
53 - 72 ha.	68	46	36	35	30	46
73 - 96 ha.	27	53	29	37	19	24
96 - 161 ha.	30	38	28	39	9	18
161 ha.	7	14	15	28	4	8
Use of farm land - hectares						
Improved	21,467	22,748	20,860	27,178	14,392	16,656
- Crops	13,736	13,641	12,855	16,306	8,498	10,452
- Pasture	6,318	7,066	5,767	6,834	4,752	4,879
- Summer Fallow	386	582	591	1,521	257	346
- Other	1,027	1,459	1,647	2,517	885	979
- Unimproved	42,538	33,558	44,362	46,110	26,527	22,525
- Woodland	36,364	29,392	36,497	40,002	20,088	19,000
- Other	6,174	4,166	7,865	6,109	6,439	3,525

Source: Statistics Canada Census of Agriculture

TABLE A-3: Farm labor characteristics by county in Northumberland region of Nova Scotia

	COLCHESTER		CUMBERLAND		PICTOU	
	1971	1981	1971	1981	1971	1981
No. of farms by age of Operator						
Under 25 years	7	10	3	9	12	6
25 - 34 years	58	89	58	84	52	93
35 - 44 years	118	128	101	147	75	99
45 - 54 years	167	130	158	139	131	106
55 - 59 years	86	59	93	64	89	51
60 - 64 years	75	56	70	63	58	53
65 - 69 years	34	36	58	50	51	44
over 69 years	57	41	45	56	48	40
Total days of off-farm work by operator	40,707	49,393	47,362	51,514	42,973	49,885
No. of farms reporting	253	254	302	299	262	279
Average per farm reporting	160	194	157	172	164	179
Total Weeks Paid Labor	7,364	13,158	10,448	19,889	4,002	6,198
No. of Farms reporting	252	273	232	285	153	155
Average per farm reporting	29	48	45	69	26.2	40

Source: Statistics Canada Census of Agriculture

TABLE A-4: Capital on farms by county in Northumberland Region of Nova Scotia

	Colchester		Cumberland		Pictou	
	1971	1981	1971	1981	1971	1981
Value of capital on farms						
Total ($000)	22,198	104,857	18,433	90,181	13,353	67,125
Average per farm ($)	36,877	910,996	31,456	147,354	25,878	136,433
Value of Land & Buildings						
Total ($000)	13,547	69,961	11,551	63,853	8,165	46,659
Average per farm ($)	22,502	127,434	19,712	104,334	15,824	94,835
Value of Machinery and Equipment						
Total ($000)	4,419	18,343	4,185	15,585	2,907	11,635
Average per farm ($)	7,340	33,412	7,142	25,466	5,634	23,648
Value of Livestock and Poultry						
Total ($000)	4,232	16,553	2,695	10,743	2,280	8,831
Average per farm ($)	7,030	30,151	4,599	17,554	4,419	17,949

Source: Statistics Canada Census of Agriculture

TABLE A-5: Field crop and vegetable areas by county in Northumberland Region of Nova Scotia

	COLCHESTER		CUMBERLAND		PICTOU	
	1971	1981	1971	1981	1971	1981
Area of major field crops (ha.)						
- Wheat	259	385	387	372	103	103
- Oats for grain	1,213	889	1,216	1,296	1,273	1,087
- Barley	641	464	805	501	476	372
- Mixed grain	506	186	987	846	331	318
- Rye	67	202	10	329	2	35
- Buckwheat	2	3	33	39	6	14
- Corn for grain	215	108	78	4	2	10
- Tame hay	9,534	9,610	7,105	8,607	5,473	7,453
- Fodder oats	139	213	179	200	59	147
- Silage/fodder corn	470	538	419	85	237	133
- Other fodder crops	191	43	183	181	32	117
- Potatoes	30	2	28	13	33	17
- Field peas	28	4	6	1	1	-
- Soybeans	-	4	-	2	-	2
- Tobacco	-	-	6	-	19	-
Area of major vegetable crops (ha.)						
- All vegetables	40	123	82	324	83	62
- Beans	-	2	1	1	1	2
- Beets	-	21	1	1	1	1
- Broccoli	-	2	-	1	-	1
- Cabbage	2	2	2	5	9	5
- Carrots	2	63	40	263	4	2
- Cauliflower	1	3	1	2	2	2
- Celery		N/A		N/A		N/A
- Cucumbers	3	2	1	2	2	5
- Green Peas	-	1	1	1	1	1
- Lettuce	1	1	-	1	5	2
- Onions	-	8	-	1	-	-
- Sweet corn	16	8	21	24	13	16
- Tomatoes	1	1	4	10	4	7
- Turnips	9	3	4	6	38	14
- Other	3	3	7	4	3	1

Source: Statistics Canada Census of Agriculture

TABLE A-6: Livestock and poultry on farms, by county, in Northumberland Region of Nova Scotia

	Colchester		Cumberland		Pictou	
	1971	1981	1971	1981	1971	1981
Total Cattle	18,418	21,662	12,844	15,271	10,307	11,704
-Dairy cows	6,948	6,960	3,018	2,718	2,933	2,981
-Replacement dairy heifers	2,158	4,024	773	1,204	756	1,412
-Beef cows	2,834	2,766	2,737	3,285	2,812	2,114
-Replacement beef heifers[1]	351	969	997	954	789	667
-Cattle on feed	1,024	1,278	1,189	1,597	643	501
Total pigs	10,279	11,902	8,138	8,434	4,397	4,845
-Sows 6 months and over for breeding	884	1,212	929	882	593	570
Total Sheep	4,129	4,662	4,158	5,475	5,657	6,864
Total Chickens	108,000	143,600	103,800	76,200	86,200	102,200
- Layers more than 5 months	52,900	67,000	93,400	N/A	33,700	N/A
- Layer Replacements less than 5 months	54,400	74,600	8,500	N/A	44,100	N/A
Total turkeys	1	720	2	560		110
Total geese	31	216	361	181	36	256
Total ducks	63	365	128	250	98	624
Total mink	3,950	N/A	250	N/A		
Total rabbits	297	237	303	216	69	497

Source: Statistics Canada Census of Agriculture

1. Includes some heifers for slaughter in 1971

TABLE A-7: Farm Mechanization by county in Northumberland Region of Nova Scotia

	Colchester		Cumberland		Pictou	
	1971	1981	1971	1981	1971	1981
Tractors[1]	790	928	660	818	579	703
-Less than 50 h.p.	N/A	544	N/A	513	N/A	443
50 - 99 h.p.	N/A	345	N/A	281	N/A	237
100 or more h.p.	N/A	39	N/A	24	N/A	23
- hectares improved land per tractor	27	25	32	33	25	24
- Tractors per Census farms	1.32	1.69	1.13	1.34	1.13	1.43
Combines	65	44	21	66	40	41
- hectares of grain[2] per combine	45	51	167	51	55	47
Swathers	4	28	6	41	3	28
Balers	357	339	227	278	232	300
- Small bale(less than 200 lb.)	N/A	332	N/A	269	N/A	292
- Large bale(greater than 200 lb.)	N/A	7	N/A	9	N/A	8
- Hectares of hay per baler	27	28	31	31	24	25
Forage harvesters	48	67	39	46	22	30

Source: Statistics Canada Census of Agriculture

1. Excludes garden tractors
2. Includes grain corn

TABLE A-8: Farms with sales of $2500. or more by product type, by county in Northumberland Region of Nova Scotia

Census farms with sales of $2,500 or more	Colchester		Cumberland		Pictou	
	1971	1981	1971	1981	1971	1981
-Total	309	380	241	396	174	277
-Dairy	161	154	67	77	82	92
-Cattle[1]	86	103	84	115	44	76
-Hogs		22		18		11
-Poultry	10	11	9	6	15	9
-Wheat	-	1	-	1	-	2
-Small grains[2]	2	8	4	7	1	8
-Field crops[3]	-	7	1	1	3	5
-Fruit and vegetables	7	36	45	129	8	20
-Misc. specialty	8	26	3	24	3	26
-Mixed	21	12	17	18	13	28
-Livestock combination	11	7	10	7	10	21
-Field crops combination	-	-	1	-	1	1
-Other combination	10	5	6	11	2	6
-Forestry	14		11		5	

Source: Statistics Canada Census of Agriculture

1 Includes cattle, hogs and sheep for 1971
2 Excludes wheat farms
3 Excludes small grains farms

TABLE A-9: Farms by sales class, by county, in Northumberland Region of Nova Scotia

No. of Farms by Sales Class	Colchester		Cumberland		Pictou	
	1971	1981	1971	1981	1971	1981
$250,000 and over		15		12		7
100,000 - 249,000		57		28		17
50,000 - 99,999	20[1]	57	18[1]	27	11[1]	35
25,000 - 49,999	43	41	15	46	16	25
10,000 - 24,999	92	72	44	89	43	53
5,000 - 9,999	64	62	70	100	48	55
2,500 - 4,999	90	76	94	94	56	85
less than $2,599	292	169	343	216	341	215
Institutional Farms	1		2		1	

Source: Statistics Canada Census of Agriculture

1 Farms with sales of $50,000 or more in 1971